

Oblique Bar and Tube Straighteners



A great percentage of produced rolled rounds and drawn, welded or rolled tubes must be conditioned and straightened before their finishing. For this operation, ŽDAS, a.s. offers a wide row of straightening lines equipped with the straighteners for various applications.

Bar Straighteners

The XRK 2 two-roll straighteners and XRK 9 nine-roll straighteners are basic types of straighteners designed to straighten bars. The XRK 10 ten-roll straightener is a new product suitable for high-quality straightening of large-diameter bars. The special straighteners, which incorporate a two-roll polishing and straightening machine, a seven-roll straightener suitable for larger-diameter bar straightening or prestraightening, and XRK 15 fifteen-roll straightener for wide ranges of diameters of bars to be straightened, have been designed based on the mentioned basic types. The listed numbers of the working rolls are not final and depend on the material composition, required straightening quality, working output or the other required parameters of the line.

Tube Straighteners

The straightening of tubes is a special operation in which straightener parameters are set according to the tube diameter, tube wall thickness and the type of material. The basic type is the XRK 3-3 six-roll straightener with all-roll drive. The XRK 5-5 ten-roll straightener with all-roll drive is a variant of the above XRK 3-3 straightener.



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ŽDAS oblique straighteners are produced with the XRK designation:

Number of straightening rolls	2-16
Bars to be straightened	5 mm to 350 mm in diameter
Tubes to be straightened	6 mm to 400 mm in diameter
Material to be straightened	3 m to 15 m in length
Attained output	acc. to the customer's specification





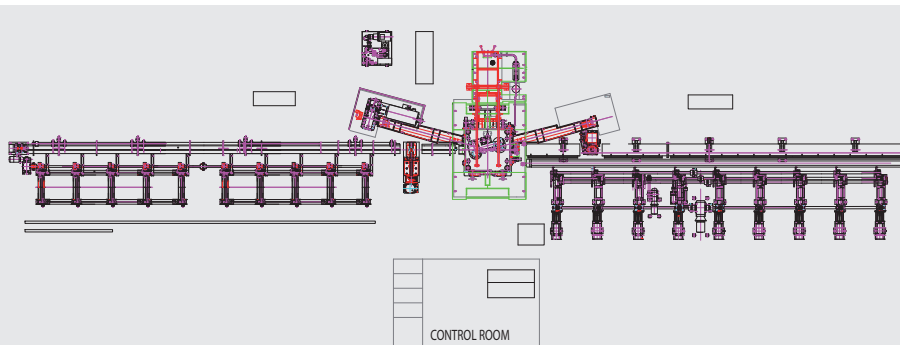
XRK 2-220 two-roll bar straightener, delivered to China in 2012. Bars to be straightened – ranged from 100 mm to 220 mm in diameter, having 4 m to 9 m in length, with maximum yield point of 1 100 MPa and maximum straightening speed of 30 m/min. Working rolls of the XRK 2-220 straightener are surface-hardened to 60 HRC.

Straightening Line Equipment

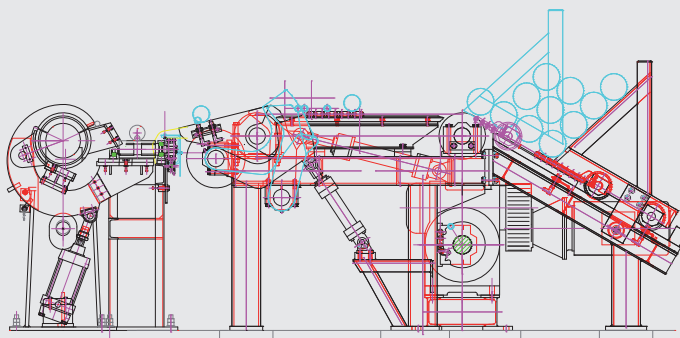
The XRK straighteners are usually incorporated in ŽDAS straightening lines delivered with the following handling devices:

- Bar bundle unscrambling device
- Entry and exit troughs
- Feed and take-away devices
- Collecting pockets

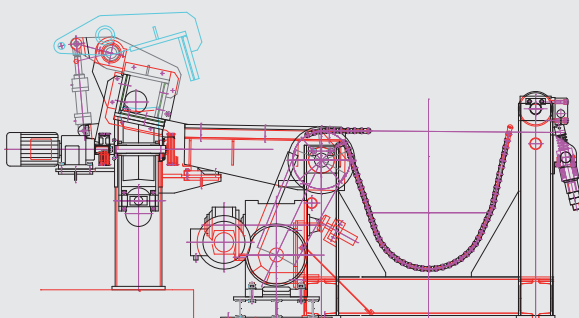
All devices are designed to achieve a maximum production, safety operation, noise reduction and low maintenance requirements. ŽDAS specialists with many years of experience and a continuous development of the new equipment are the guarantee of top parameters and high life of the equipment offered.



Example of the layout of the straightening line

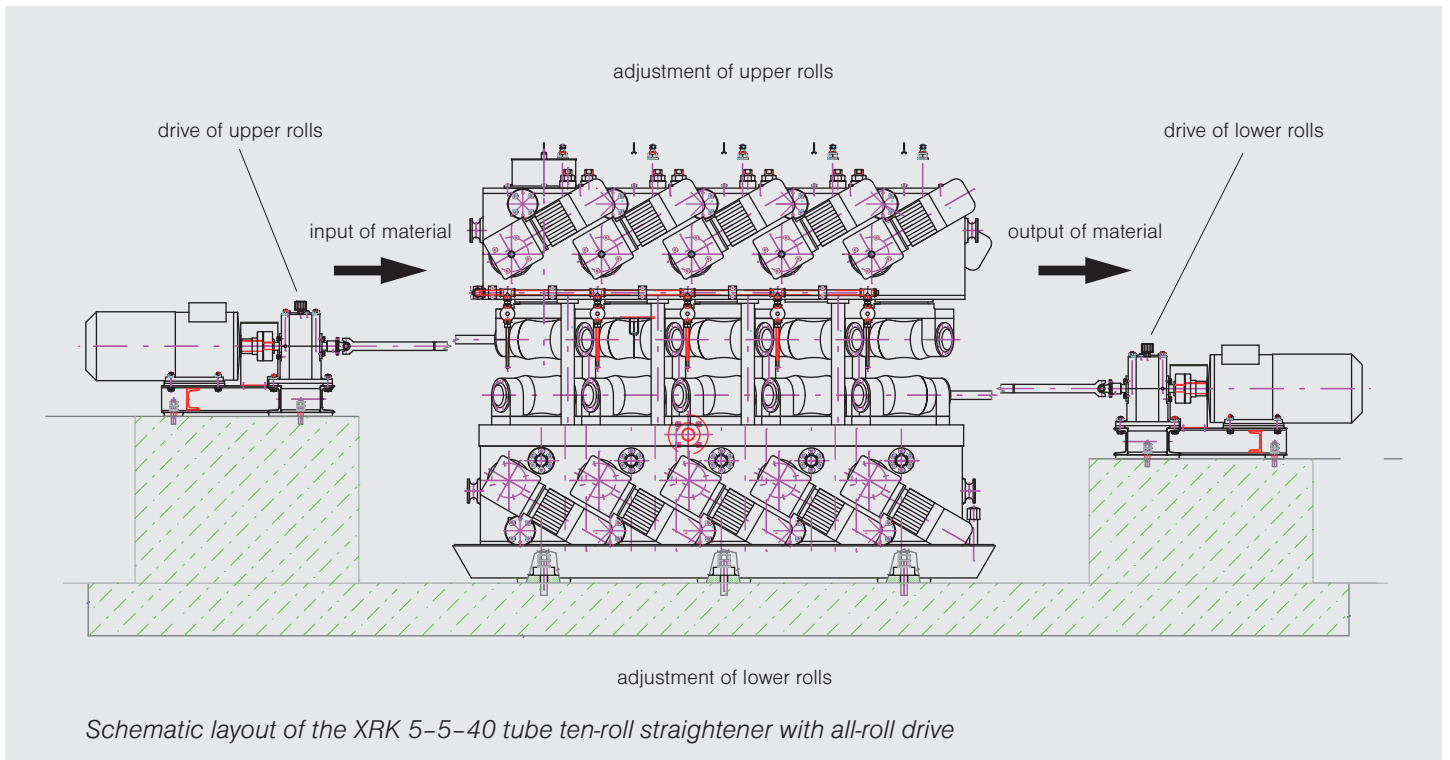


Unscrambling conveyer schematic layout

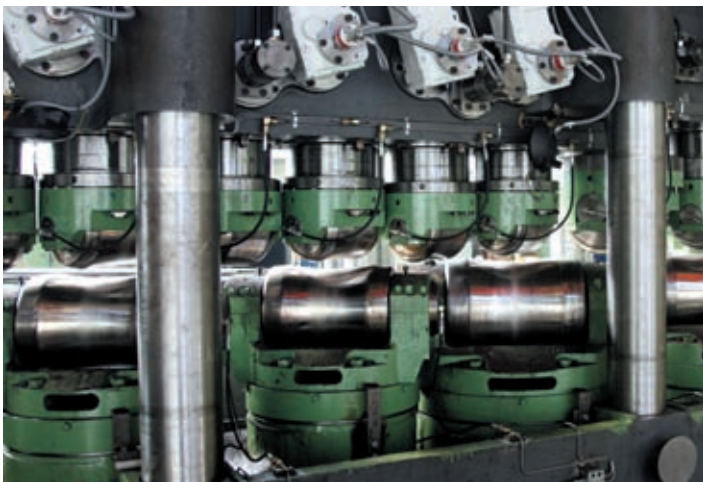


Schematic layout of piling equipment with collecting pocket





Inspection line delivered to the Russian ironworks OEMK Stary Oskol



The arrangement of the working rolls of the XRK 15-100 straightener. Nine rolls close to the entry of the straightener are used to straighten bars with diameter over 50 mm. The other rolls only bend a bar within the elastic deformation. When straightening the bars with diameters up to 50 mm it is possible to use all fifteen (15) rolls or nine (9) last ones. The gear in the gearbox ensures the same peripheral speed of all lower driven rolls.



The line is equipped with a special XRK 15-100 fifteen-roll straightener. Bars to be straightened – ranged from 20 mm to 83 mm in diameter, having 5.5 m to 12 m in length, with a yield point of 1 300 MPa, at a maximum straightening speed of 90 m/min. The line is designed for processing black as well as polished material.



The XRK 2-300 straightener is the largest type dimension that has been produced by ŽĎAS, a.s. so far.

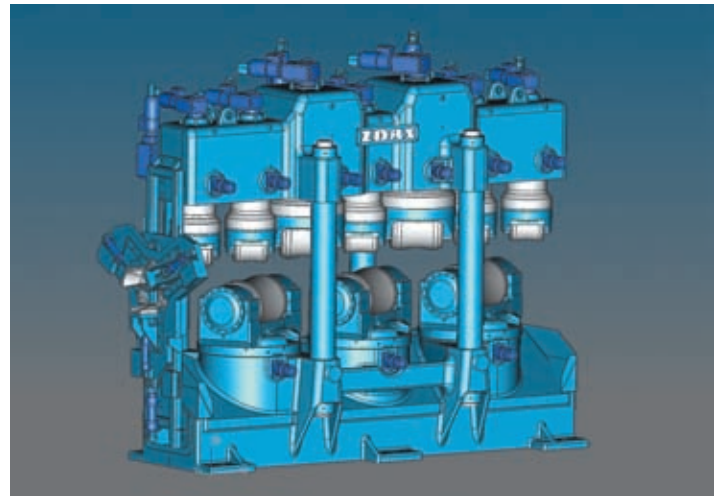


The XRK 2-80 polishing and straightening machine is designed for straightening and surface finishing of bars.



XRK 2-60

A number of straightening machines with type dimensions XRK 2-60, XRK 2-70, XRK 2-90 and XRK 2-220 were delivered to Chinese customers in 2010 and 2011.



3D model of the XRK 10-150 ten-roll bar straightener. This straightener is fitted with the inlet device of new design, which facilitates the feeding of a bar into the straightener. Bars to be straightened – ranged from 45 mm to 150 mm in diameter, having 4 m to 12 m in length, with maximum yield point of 1 000 MPa and maximum straightening speed of 70 m/min.

Examples of other XRK straighteners

- XRK 2-60

Bars to be straightened – ranged from 12 mm to 60 mm, having 4 m to 10 m in length, with maximum yield point of 1 100 MPa and maximum straightening speed of 120 m/min.

- XRK 9-100

Bars to be straightened – ranged from 30 mm to 80 mm, having 4 m to 10 m in length, with a maximum yield point of 1 200 MPa, at a maximum straightening speed of 110 m/min.

- XRK 2-300

The straightener is designed to straighten bars ranging from 120 mm to 300 mm in diameter, having 4 m to 12 m in length, with maximum yield point of 1 100 MPa and maximum straightening speed of 18 m/min.

Main Features of ŽĎAS Straighteners

- High rigidity, reliable operation, easy attendance and maintenance
- High straightening quality without damage to the material being straightened
- High life of working rolls with the possibility of their renewal
- Ecological and safe operation by the use of noise enclosures and dust/scale exhaust system

The design is based on many years of experience of the work team of ŽĎAS, a.s. The used materials and components conform to the highest criteria required in this branch of industry.

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